dentition of both jaws nearly complete, with other bones of other specimens. The wording of the description is intricate and short.

A PAPER entitled "A Study of North American Noctuidæ, by A. R. Grote, was read on July 2 before the Buffalo Society of Natural Sciences, declaring that six new genera (Ufeus, Ablepharon, Ommatostola, Argillophora, Harveya, Spiloloma) and twenty-seven hitherto undescribed species (Agrotis, 7; Ufeus, 2; Mamestia, 1; Dianthœcia, 1; Oncocnemis, 3; Hadena, 1; Ommatostola, 1; Cucullia, 1; Xylina, 1; Heliothis, 6; Argillophora, 1; Harveya, 1; Spiloloma, 1), occur in the N. American Insect Fauna.

SIR HENRY RAWLINSON'S presidential address at the last anniversary meeting of the Geographical Society has been published in a separate form by Messrs. Clowes and Sons. We are glad to see it reproduced in a handy and well-printed form, for it contains a masterly summary of the progress of geographical knowledge during the past year.

WE have received the prospectus of what promises to be a handsome and valuable work, "The Fenland, Past and Present: its History, Geography, Geology, Natural History, Scenery, Antiquities, Climatology, Drainage, Agricultural Produce, and Sanitary Condition; illustrated with Wood Engravings, Maps, and Diagrams; by Samuel H. Miller, F.R.A.S., Fellow of the Meteorological Society; and Sydney B. J. Skertchley, F.G.S., H.M. Geological Survey." It will be published by Leach and Son, Wisbech; and Longmans, Green, and Co. London. Under the head "Fenland," the authors include that area of low, once marshy lands, in which the rivers Witham, Welland, Nene, and Ouse interlaced, including nearly 2,000 square miles, and roughly bounded by a line drawn from Lincoln by Bourn and Peterborough to Cambridge on the west; from Lincoln to Skegness on the north; from Cambridge and St. Ives to Brandon on the south; and from Brandon to Lynn on the east (thus including Boston, Sleaford, Spalding, Croyland, Thorney, Wisbech, March, Huntingdon, Ely, besides the border towns.)

A VERY deserving institution has recently been established in Cincinnati, under the title of the Cincinnati Acclimatisation Society, its object being to effect the introduction of such foreign birds as are worthy of note for their song or their services to the farmer or horticulturist. The society announces that during last spring it expended 5,000 dols. in introducing fifteen additional species of birds, and that it had already successfully accomplished the acclimatisation of the European sky-lark, which is stated to be now a prominent feature of the summer landscape in the vicinity of Cincinnati. Among the species which it is proposed to introduce is the European titmouse, considered abroad as one of the most successful foes of insects injurous to vegetation.

THE addditions to the Zoological Society's Gardens during the past week include a Harnessed Anntelope (*Tragelaphus scriptus*), a Double-crested Pigeon (*Lophoiœmus antarticus*), two Senegal Touracous (*Corythaix persa*), two Chilian Tinamous (*Rhynchotus perdicarius*), a White-fronted Dove (*Leptoptila jamaicensis*), a Glossy Ibis (*Ibis falcinellus*), a Mauge's Dasyure (*Dasyurus maugæi*), a Barbary Ape (*Macacus inuus*), and others.

SCIENTIFIC SERIALS

Annalen der Chemie und Pharmacie Neue Riehe, Band xci. Heft 2 und 3, June 14. This number begins with communication No. 83 from the Griefswald Laboratory, the subject of which is Phenathren, by M. Hayduck. The author describes several of the compounds of this body.—From the same laboratory we have a notice on the compound $C_{14}H_8S_2$, by C. Pauly.—B. Rathke contributes a paper on the chloro-sulphides of carbon, and another on the compounds of the amides with that body. One of these chloro-sulphides has the formula $CSCl_4$—perchloromethylmercaptan, another the formula $CSCl_2$, several of their compounds are described. The same author also contributes a short paper on the changes nitro-compounds undergo in sulpho-acids.—Messrs. Maunder and Tollens communicate a paper on β Bibromopropionic acid, in which they give an exhaustive account of this body and its compounds.—Messrs. Caspary and Tollens have converted β Bibromopropionic acid into acrylic acid and give an account of the process, and of the salts of acrylic acid.—Mr. B. Tollens communicates a paper on the constitution of the allyl and acryl derivatives.—Prof. Max. von Pettenkofer has a paper on "Nourishment in general, and on flesh extract as an essential portion of human nutriment in particular."—Messrs. Lieben and Paterné have a paper on the dry distillation of calcic formate.—J. Wislicenus communicates a paper on the optically active lactic acid of flesh extract, and on paralactic acid. The same author also communicates some observations on ethyllactic acid. The next paper is by C. E. Groves on the formation of naphthaquinone by the direct oxidation of naphthalene, which has already appeared in the March number of the Chemical Society's Journal. Messrs. Hlasiwetz and Kachler, in a postscript to their paper on a new derivative of sulpho-carbaminic acid, mention the discovery of the body in question by Zeise in 1842. H. Ranke finishes the number with some experimental proofs of the possibility of the spontaneous combustion of hay.

Reale Instituto Lombardo di Scienze e Lettere Rendiconti, serie ii. vol. vi. Fascicoli x.—We notice papers on *Felobates fuscus*, by Prof. Emelio Cornalia; on the Italian earthquake of March 12, by A. Serpieri; on some geological theories, by G. Cantoni; on the inversion of currents in electromotors, by A. Ferrini. Besides these there are papers on Manzoni and on Kant's philosophy, the first by A. Buccellati, and the second by C. Cantoni. Fascicolo XI. contains only social papers, none of scientific interest. In Fascicolo XII., S. A. Lemoigne contributes a paper on the mechanism of rumination, and J. A. Serpieri one on the earthquake of March 12; S. A. Cantoni has a paper on the molecular movements of gases. The rest of the number is devoted to the section of moral and political science.

IN the *Annali de Chimica applicata alla Medicina* for June is a paper on the cremation of the dead, which practice is strongly advocated. The author, who is anonymous, states that in Belgium 7,500 hectares (1 hectare = 2·47 acres) are unproductive of food, through being used as cemeteries. He estimates the value of this land at from 38 to 40 millions (lire?).

SOCIETIES AND ACADEMIES

LONDON

Royal Horticultural Society, July 16.—Scientific Committee.—Dr. M. T. Masters, F.R.S., in the chair.—A letter was read from the locomotive superintendent of the Brighton Railway stating the results of the company's experience in using a mixture of chalk with coal for fuel. It was found that used for any other purpose than that of saving the fire-bars from Welsh coal (for which it is admirably suited) or for reducing the area of heating surface it increases the ordinary consumption of fuel considerably.—The Rev. M. J. Berkeley showed female flowers of *Lychnis diurna*, in which the calyx was reduced by arrest of development to a mere rim.

August 6.—General Meeting.—W. B. Kellock in the chair.—The Rev. M. J. Berkeley commented upon the fruits and vegetables exhibited. He mentioned the remarkable improvement in the quality of W. Indian pines owing to the introduction from England of the better cultivated kinds.—Prof. Thiselton Dyer pointed out that a curious cucurbit which had lately been introduced, rather as a curiosity than for any useful purpose, under the name of Sooly Qua, was a form of *Luffa ægyptiaca*, the common washing gourd. Another cucurbit known as the Toong Qua appeared to be identical with *Benincasa cerifera*.—A new method of propagating ipecacuanha had been devised in India by Mr. Jaffray, and promised to be of great importance. It simply consisted in striking the leaves upright in pots. These produced roots and the most superficial of these eventually produced buds.—As an interesting fact bearing upon the distribution of plants, an extract of a letter from Mr. Moseley, naturalist on board H.M.S. *Challenger*, was read. A vessel laden with grapes was wrecked on the coast of Bermuda a short time ago.

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The boxes of grapes were washed ashore, and the seeds germinated in abundance, so that the governor was able to collect plants for his garden.

BERLIN

German Chemical Society, July 28.—O. Liebreich, vice-president, in the chair.—A. Laderburg described a simple way of obtaining zinc-methyl and its action on silicic ether. The result is a liquid boiling at 150° of the formula $SiCH_3(OC_2H_5)_3$, to which he gives the name ortho-silico-acetic ether. The same chemist, conjointly with Demole, has transformed chlorhydrine into acetochlorhydrine of glycol. The latter by treating oxide of ethylene with aniline has obtained a single base of the formula of phenylated mono-oxyethylene-amine $CH_2OHCH_2NHC_6H_5$.—O. Jacobsen has been able to investigate human bile obtained from a fistula of a strong and healthy man. It contained no taurocholic acid, while other human biles obtained from patients contained both glyocholic and taurocholic acids in variable proportions.—A. Faust has transformed monochlorinated phenol into resorcin (and not, as Peterssen communicated lately, into hydrochinon.—H. Limpricht has compared sulpho-ortho-toluidinic acid and many of its derivatives, with those of sulpho-pseudo-toluidinic acid.—Thomas Dykes Barry described several derivatives of propiophenone $C_6H_5COC_2H_5$: viz., two isomeric mononitro-propiophenones, amido-propiophenone, and secondary propyl-benzol-alcohol $C_6H_5CH.OH.C_2H_5$.—G. Goldschmiedt, in treating benzol and bromal with sulphuric acid obtained diphenyl-tribrom-ethane $(C_6H_5)_2CH.CBr_3$. This treated with potash yields diphenyl-dibrom-ethylene $(C_6H_5)_2C_2Br_2$, and heated with zinc powder, it is transformed into stilbene $C_{14}H_{12}$.—P. Liechto has determined the atomic weight of molybdenum = 95·86, and describes the following chlorides:—$MoCl_2$, $MoCl_3$, $MoCl_4$, $MoCl_5$, and $MoO(OH)_2Cl_2$.—A. Michaelis and G. Köthe find that iodide of lead treated with sulphite of sodium yields sulphite of lead and iodide of sodium, and that the salt formerly described by Zinero $I_2SO_2(ONa)_2$ does not exist.—A. Michaelis and O. Schifferdecker describe the following compounds of sulphur:—SCl_4, existing only at temperatures below −20°, $S_2O_3Cl_4$, (a solid body obtained by treating SO_3HCl with SCl_4), and its product of decomposition by moist air $S_2O_5Cl_2$.—A. Mitscherlich described a new method of organic analysis. He replaced oxide of copper by that of mercury, weighs the reduced mercury, CO_2 and H_2O in the ordinary way, and thus determines the oxygen contained in the substance, as well as the Cl, I, Br retained by the mercury or the sulphur and phosphorus transformed into sulphate and phosphate of mercury.—A. Borodin in treating valeric aldehyde with solid caustic potash at 0° obtained alcoholic products of condensation of the following formula; $C_{10}H_{18}O$ $C_{20}H_{38}O_3$. The former left for three years with diluted soda yielded crystals of the composition

$$C_{20}H_{42}O_5 = (C_{10}H_{20}O_2) + H_2O.$$

(*polymeric valeral*)

C. Engles, by treating monochlorinated acetonitrile $NC.CH_2Cl$ with aniline replaced Cl by NHC_6H_5, thus obtaining a base, anilido-acetonitril.—A. Emmerling and C. Engles have obtained from acetophenone the corresponding pinacone and secondary alcohol.—E. Baumann, by treating cyanamide with sulphuric acid and water, has obtained a body of the composition of urea, but hygroscopic giving a nitrate of a different crystalline form, and a double salt with chloride of platinum, n ia t differences that seem to i dicate that this body is a new compound isomeric with urea.—E. Mulder described several derivations of uric acid and of urea.—C. Tiemann compared two methods for determining nitric acid in water. The wells of Berlin yield water containing great quantities of nitric acid, viz. 17 in 100,000 instead of 0·4, which is generally admitted to be the maximum quantity allowed for drinking purposes. It should be known, however, that the water-works supply the town with river water of good quality.—C Biedermann showed beautifully coloured salts of mononitrophenol with alkalies and alkaline earths.—W. H. Pike, of London, has succeeded in obtaining some of the higher homologues of oxaluric acid by heating a molecular mixture of urea or sulpho-carbamide with an anhydride of a dibasic acid. The acids already obtained are succincarbaminic acid $NH_2—CO—NH—CO—C_2H_4—COOH$., succin-sulpho-carbaminic acid $OH_2—CS—NH—CO—C_2H_4—COOH$, and citracon-sulpho-carbaminic acid $NH_2—CS—NH—CO—C_3H_4—COOH$.—The next meeting of the society will take place the 13th of October.

PARIS

Academy of Sciences, Aug. 4.—M. Bertrand, president, in the chair.—The following papers were read:—A further portion of M. Hermites' paper on the exponential function.—A reply to M. Vicaire's theory of the sun, by M. Faye. The author controverted the statement that the sun is a cold mass of combustible matter burning at the surface only, in an atmosphere of oxygen.—On the determination of the wave-lengths of the lines in the ultra-violet, and also in the ultra-red parts of the spectrum by means of phosphorescence, by M. Ed. Becquerel.—On the action of armatures applied to compound magnets, by M. Jamin.—On the reciprocal displacements between the hydracids, by M. Berthelot. The author has been investigating the heat phenomena produced by these reactions.—Note on the cubic capacity and on the volume of air requisite to insure the healthfulness of inhabited places, by General Morin. The general gives the results of observations on barracks and hospitals. As regards the former, he thinks that 16—20 cubic metres of space are required per man, equal to 565—706 cubic feet.—The fourth part of M. A. Ledieu's paper on thermodynamics was then read.—An analysis of Dewalgnite from Saim Chateau, Belgium, by M. F. Pisani.—On the Cocuyos of Cuba, by Señor de dos Hermanas. The cocuyo is a luminous insect, said by M. Blanchard, at the conclusion of the paper, to belong to the genus *pyrophorous*, to which also a Mexican insect of the same name belongs.—Memoir on cefebral localisations, and on the functions of the brain by Dr. Fournie.—On polychromic photography, by M. L. Vidal. This was a description of a recently patented method of obtaining coloured prints by the use of various pigments, as in carbon printing.—M. Lichtenstein communicated a paper on the present state of the Phylloxera question, and M. Signoret one on the evolution of the Phylloxera.—Fourth note on the maximum resistance of magnetic coils, by M. T. du Moncel.—On electric condensation, by M. Neyreneuf.—Studies on nitrification, II., by M. Schlœsing.—On the corundum of North Carolina, Georgia, and Montana, by Mr. Laurence Smith.—On Roman essence of chamomile, by M. E. Demarçay.—On the characteristics of the true polyatomic alcohols, by M. Lorin.—On the variation in the amount of urea excreted under normal nourishment, and under the influence of tea and coffee, by M. E. Roux. The author found that these substances very largely increase the amount of both urea and chlorine voided in the urine, if they be taken after abstinence from them, but that when continuously used, the quantity gradually returns to its normal amount. Hence he regards this action as that of the washing out of accumulated urea.—On the uniformity of the action of the heart when that organ is free from external nervous influences, by M. Marey.—On some effects produced by lightning at Troyes, on July 26, 1873, by M. E. Parent.

PAMPHLETS RECEIVED

ENGLISH.—Improved Method of Recording Telegrams: Richard Herring.—Report of the Radcliffe Observer to the Board of Trustees, read at their meeting at Oxford.

FOREIGN.—Medizinische Jahrbucher heraus geben von der K. K. Gesellschaft der Arzte, redigirt von S. Stricker, Jaargang 1873, Heit i. and ii. (W Braunmuller, Wien.).—Ofversigt af Kongl. Vetenskaps Akademiens Förhandlingar, Trettionde Angangen, 1873, Nos. 2, 3, 4 (Stockholm).—Bulletins de la Société d Anthropologie de Paris, Fasc. i, Jan. et Feb., 1873.

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